Partisan Expectations and COVID-Era Inflation*

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Abstract

We document that, during the COVID-19 era, the inflation expectations of Democrats remained strongly anchored, while those of Republicans did not. Republicans' expectations not only rose well above the inflation target, but also became more sensitive to a variety of shocks, including CPI releases and energy prices. We then exploit geographic variation in political affiliation at the MSA level to show that the partial de-anchoring of expectations had implications for realized inflation. Counterfactual exercises imply that, had all expectations become as unanchored as those of Republicans, average inflation would have been two to three percentage points higher much of the pandemic period, ceteris paribus. The decline in inflation expectations after 2022 aided in reducing inflation from its peak.

Keywords: inflation expectations, anchoring, COVID-19 pandemic

JEL Classification: E3, D72

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1 Introduction

Rising inflation in the COVID-19 pandemic led to concern about whether inflation expectations would become unanchored. It is generally agreed that expectations were poorly-anchored during the Great Inflation of the 1970s, and that the improvement in anchoring since the Volcker disinflation has been of great value for monetary policymaking (Binder and Kamdar, 2022).[1] But there is less agreement about the extent to which expectations unanchored with the post-pandemic inflation, and, more broadly, about the role of inflation expectations in this high-inflation episode.

In this paper, we document that expectations anchoring in the COVID-19 era was a partisan phenomenon. That is, consumer expectations remained anchored for Democrats, while becoming unanchored for Republicans. In the Michigan Survey of Consumers, Republicans' inflation expectations rose more than those of Democrats', not only for short-run inflation, but also for long-run inflation. In fact, Democrats' expectations remained virtually stable throughout the entire period from 2020 through 2023, while nearly the entire rise and subsequent fall in inflation expectations can be attributed to Republicans and Independents. The departure of Republicans' longer-run expectations from the Federal Reserve's two percent inflation target is not the only indication that these expectations became unanchored. Republicans also became more uncertain about longer-run inflation, and their expectations—unlike Democrats'— became more responsive to inflation itself and to gas and energy prices.

Using higher frequency data and an event study approach, we also show that Republicans and Democrats differentially adjusted their expectations in response to macroeconomic announcements in the COVID period. Specifically, using an event-study approach around CPI releases, we show Republicans significantly and differentially increased their short- and long-run inflation expectations relative to Democrats in the middle of 2021. This coincides precisely with rapid rise of inflation from below 2% to above 5%. These results suggests that Republican expectations were more affected by these announcements.

These partisan differences provide an opportunity to study the role of inflation expectations in inflation dynamics. Our evidence suggests that households of different partisan leanings interpreted macroeconomic conditions and information about the inflationary impact of shocks differently. Regional variation in political composition means that different parts of the country were differentially exposed to these differences in interpretations. Thus,

[1] Mishkin (2007, p. 329), for example, suggests that better-anchored inflation expectations "implies some very good news: potentially inflationary shocks, like a sharp rise in energy prices, are less likely to spill over into expected and actual core inflation. Therefore, the Fed does not have to respond as aggressively as would be necessary if inflation expectations were unanchored, as they were during the Great Inflation era." Also see Janet Yellen's remarks at Brookings on October 3, 2019, https://www.brookings.edu/articles/former-fed-chair-janet-yellen-on-why-the-answer-to-the-inflation-puzzle-matters/.

even though the United States is a monetary union with a common monetary policy regime across regions, expectations of long-run inflation vary across regions. We exploit this variation and estimate a expectations-augmented Phillips Curve at the MSA level. As a proxy for inflation expectations, we include a shift-share variable in which the shifts are the average party-specific inflation expectations and the share is MSA-level voter shares from the 2016 election.

The resulting estimates point to a non-trivial role of inflation expectations in inflation dynamics. We show this through a series of counterfactual exercises. For example, our estimates imply that, had all expectations become as unanchored as those Republicans, average MSA-level inflation would have been two to three percentage points higher than realized for most of 2021 to 2024, ceteris paribus. Had expectations remained anchored, inflation would have increased by less and returned to pre-pandemic levels. As of early 2024, inflation was still above its pre-pandemic mean, though much declined from its 2022 peak. We investigate the role of expectations in this decline by considering what inflation would have been had expectations remained elevated. The results suggest that the stabilization of expectations at high levels would lead to inflation itself stabilizing at high levels. We conclude that — consistent with economic theory and the fears of central bankers — the partial de-anchoring of expectations mattered in the determination of inflation itself. Similarly, the corralling of expectations aided in the reduction of inflation.

Our work is related to, but distinct from, previous literature that has used sub-national data to estimate Phillips curves (Kumar and Orrenius, 2016; Fitzgerald et al., Forthcoming; Cerrato and Gitti, 2024). This work focuses on identifying the *slope* of the Phillips curve (the coefficient on unemployment). Hazell et al. (2022), for example, use state-level data to estimate the slope of the Phillips curve. Their regressions, like ours, include region and time fixed effects. But they assume that long-run inflation expectations are the same across states since all face the same monetary policy regime. They do not include long-run inflation expectations in the regression, assuming they will be absorbed in the time fixed effects. We argue that long-run inflation expectations are not fully absorbed by either time or region fixed effects because of the combination of regional variation in partisanship and time-varying partisan gaps in expectations.

Our work also contributes to, and brings together, several additional strands of the literature. The first is a large literature on households' inflation expectations formation. High and time-varying disagreement is an important feature of consumer inflation expectations survey data (Branch, 2004; Mankiw and Reis, 2007; Binder and Ryngaert, forthcoming). Heterogeneity across demographic groups may arise because of differences in information processing and financial literacy and different personal experiences (Pfajfar and Santoro,

2008; Malmendier and Nagel, 2016; Pedemonte et al., 2023). Heterogeneity in expectations also reflects consumers' differing exposure to and interpretation of central bank communication and media coverage (Lamla and Maag, 2012; Dräger, Lamla, and Pfajfar, 2016; Binder, 2017a; Binder, 2017b; Binder and Rodrigue, 2018; Lamla and Vinogradov, 2019; Larsen, Thorsrud, and Zhulanova, 2021).

Recently, this literature has focused on how the COVID-19 pandemic and associated policy responses affected their expectations. The pandemic was accompanied by a large increase in inflation disagreement and uncertainty, as consumers initially struggled to interpret the potential inflationary consequences of the pandemic (Armantier et al., 2021). As inflation rose, consumers may have become more attentive to inflation (Braitsch and Mitchell, 2022), as seems to be generally the case in higher inflation environments (Weber et al., 2023). In fact, Mitchell and Zaman (2023) find that households' forecast accuracy relative to professional forecasters' accuracy increases as inflation rises.

Our work also contributes to the literature on partisanship in economic beliefs and expectations. Political science research has documented greater optimism among households whose preferred party holds the presidency (Bartels, 2002; Gerber and Huber, 2009; Prior, Sood, Khanna, et al., 2015; McGrath, 2017; Brady, Ferejohn, and Parker, 2022). In line with this, Coibion, Gorodnichenko, and Weber (2020) survey U.S. consumers before the 2020 presidential election and find polarized predictions of economic conditions conditional on election results. States with a greater share of congressional representatives from the President's political party have more favorable economic sentiment, which in turn boosts output growth (Benhabib and Spiegel, 2019).

Having one's preferred party in power is associated with not only greater optimism but also lower inflation expectations. This finding is robust across a variety of surveys (Mian, Sufi, and Khoshkhou, 2023; Binder, 2023; Kamdar and Ray, 2023). The New York Fed's Survey of Consumer Expectations does not ask about respondents' political preferences, but expectations in red states are higher when Democrats are in office, and expectations in blue states are higher when Republicans are in office (Bachmann et al., 2019). Farhart and Struby (2024) find partisan differences in inflation expectations in the 2022 Cooperative Election Study data that are driven by differences among "knowledgeable, low-trust partisans." Stantcheva (2024) surveyed consumers about inflation attitudes in December 2023 and January 2024, and found that Republicans had higher inflation perceptions and expectations, and were more likely to blame the government or President Biden for high inflation.

The effect of partisanship on economic sentiment and expectations is not only a U.S. phenomenon, but is also documented for Australian consumers, for whom election-driven

shifts in sentiment also drive shifts in spending intentions (Gillitzer, Prasad, and Robinson, 2021). Partisan differences in expectations are also not limited to consumers, but also appear among professional forecasters in the Wall Street Journal survey (Kay et al., 2024) and among CEOs making earnings forecasts (Stuart, Wang, and Willis, 2021).

Notably, partisan differences in inflation expectations have persisted despite efforts to insulate central banks from political pressure and to increase monetary policy transparency and credibility (Caporale and Grier, 2005; Alpanda and Honig, 2009; Binder, 2021). Consumers may nonetheless view the Fed as a political institution or attribute inflation outcomes to elected officials rather than to monetary policy (Binder and Skinner, 2023; Stantcheva, 2024).

The paper proceeds as follows. Section 2 describes the partisan gap in inflation expectations as well as indications that expectations became less shock-anchored in the pandemic period. Section 3 describes event studies around scheduled announcements and shows that Republican and Democrat expectations responded differently to these announcements. Section 4 presents an MSA-level expectations-augmented Phillips Curve and presents our counterfactual exercises. Section 5 concludes.

2 Partisan Inflation Expectations and Anchoring

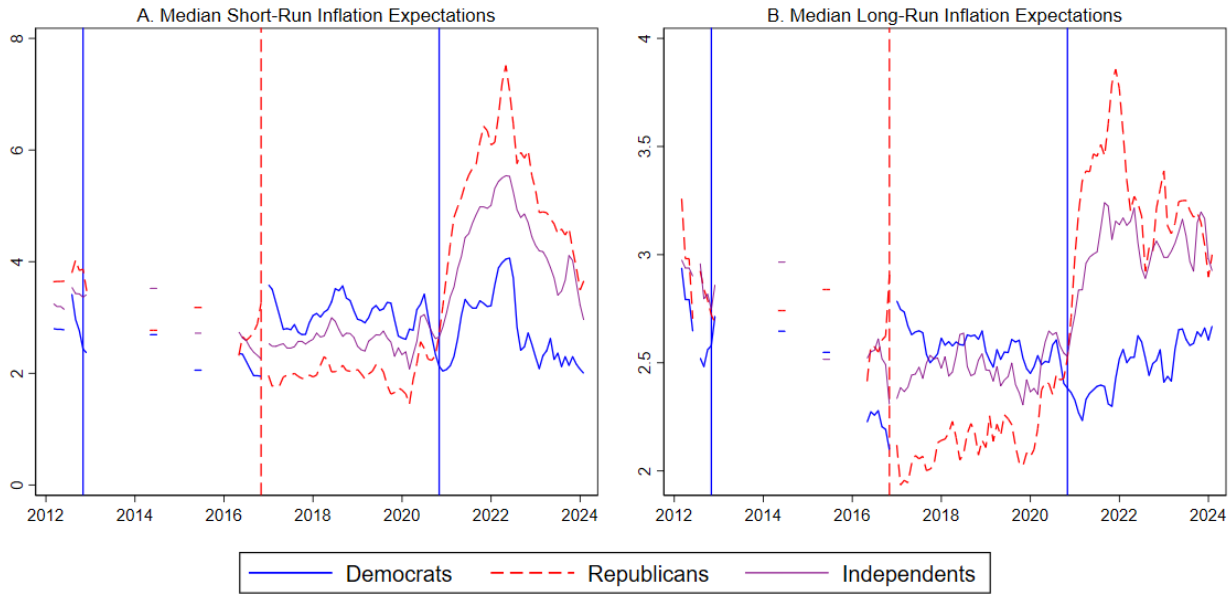
The Michigan Survey of Consumers (MSC) has collected data on households' expectations on a monthly basis since 1978. The survey asks a nationally-representative sample of respondents about their inflation expectations over the next 12 months and over the next five to ten years. From 2006 through 2016, the survey included occasional questions about respondents' political party preference; respondents could report their affiliation as Republican, Democrat, or Independent/have no preference. Beginning in 2016, this question was asked more regularly, and since February 2017, partisan affiliation is solicited every month. Most respondents answer this question, with only about 3% responding that they do not know or providing no response.

2.1 The Partisan Gap in Expectations

Respondents who share a political affiliation with the President have lower inflation expectations than those who do not. Figure 1 plots the median inflation expectations of self-identified Democrats, Independents, and Republicans since 2012. Vertical lines indicate the re-election of Democrat Barack Obama in November 2012 and the elections of Republican Donald Trump in 2016 and Democrat Joe Biden in November 2020. Democrats' inflation

expectations were lower than Republicans' during the Obama years, but this pattern swiftly reversed with Trump's election, and reversed again with Biden's election.[2] Independents' inflation expectations fall between those of Republicans and Democrats, though in recent years, they are closer to those of Republicans.

Figure 1: Partisan Divide in Inflation Expectations



Notes: Data from Michigan Survey of Consumers. Panels A and B show the median inflation expectations of Democrats and Republicans at the one-year and five- to ten-year horizons, respectively. Each series is plotted as a three-month moving average. Vertical lines denote Presidential election dates and winners.

The strong dependence between inflation expectations and party affiliation holds even when controlling for other demographic variables that are plausibly correlated with both political party and inflation expectations. The first two columns of Table 1 show how short-run inflation expectations depend on party affiliation and demographic characteristics such as gender, education, and homeownership. We perform this analysis separately for the pre-COVID period (prior to 2020) and for 2020-2024.[3] The dummy variable PresidentParty indicates that the respondent is of the same political party as the president (or president-elect, in the months immediately following an election), and OppositionParty indicates that the respondent is of the other party. Both are zero for independents.

Before 2020, members of the President's party have inflation expectations that are about

[2]The pattern is similar if we plot the mean instead of the median as a measure of central tendency.

[3]Results are similar if we split the sample in March 2020, when the pandemic became more serious in the United States, or in November 2020, when the Presidential election ocurred.

0.74 percentage points lower than those of independents, and members of the opposition party have expectations about 0.35 percentage points higher, so the gap between members of opposing parties is about 1.1 percentage points. Since 2020, those effects have more than doubled in magnitude, and the gap between Republicans and Democrats is 2.7 percentage points. Males, college-educated respondents, and homeowners all have systematically lower expectations than their survey counterparts, but the *partisan* gap in inflation expectations is the largest in magnitude. For longer-run expectations, as shown in columns 3 and 4, there is no difference between Independents and members of the opposition party; both have higher expectations than members of the President's party. Since 2020, Democrats' long-run expectations are 0.72 percentage points lower than Republicans *and* Independents'. Again, this is larger than the gaps by gender, education, or home ownership.

Table 1: Political Party and Inflation Expectations

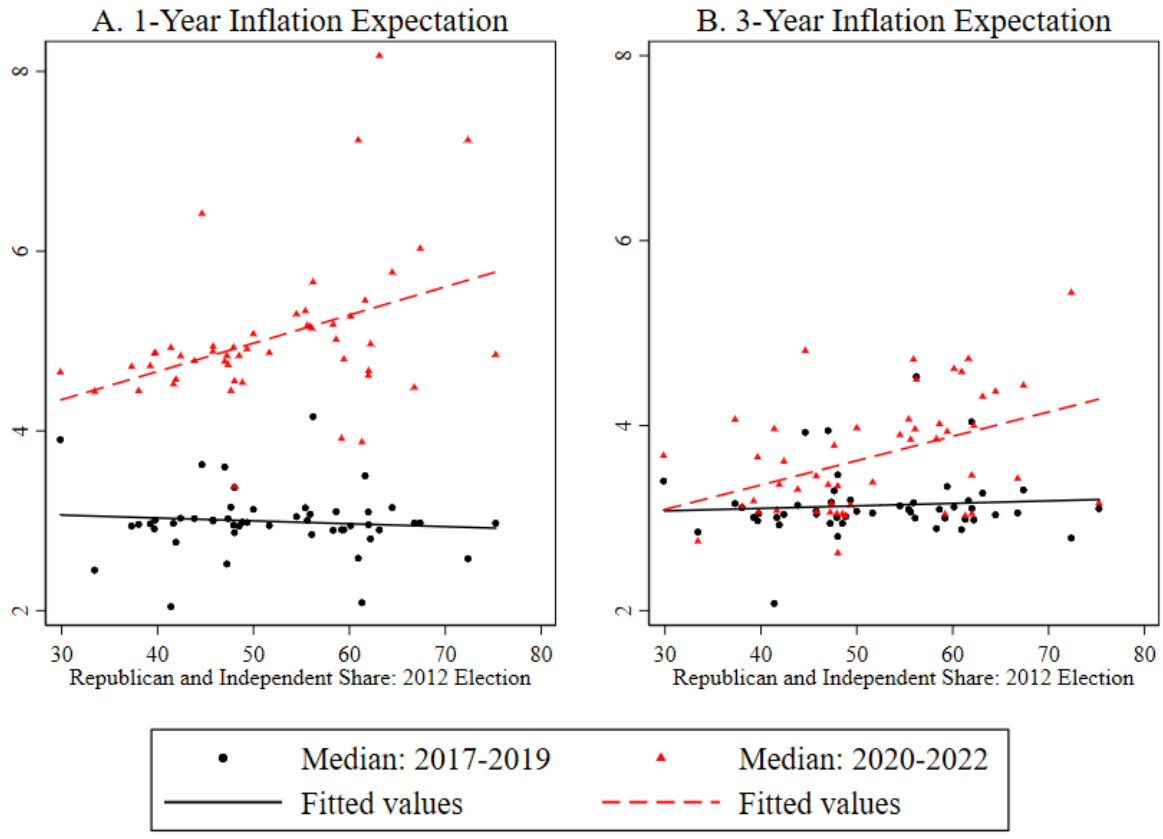
	(1)	(2)	(3)	(4)
	1-yr, Pre-2020	1-yr, Since 2020	5-yr, Pre-2020	5-yr, Since 2020
PresidentParty	-0.74***	-1.77***	-0.48***	-0.72***
	(0.05)	(0.07)	(0.04)	(0.05)
OppositionParty	0.35***	0.91***	0.01	0.05
	(0.05)	(0.08)	(0.04)	(0.06)
Male	-0.72***	-0.60***	-0.43***	-0.33***
	(0.04)	(0.07)	(0.03)	(0.05)
College	-0.61***	-0.87***	-0.29***	-0.51***
	(0.04)	(0.07)	(0.03)	(0.05)
Homeowner	-0.24***	-0.07	-0.11***	-0.22***
	(0.05)	(0.08)	(0.04)	(0.06)
Constant	4.41***	5.93***	3.57***	4.14***
	(0.06)	(0.10)	(0.05)	(0.08)
N	34466	26466	34231	26412
R^2	0.03	0.05	0.01	0.02

Notes: Data from Michigan Survey of Consumers. Dependent variable is short-run inflation expectations in columns 1 and 2, and long-run inflation expectations in columns 3 and 4. *** p< 0.01, ** p< 0.05, * p< 0.10.

In recent years, the partisan gap in inflation expectations is large enough that it results in clear differences in average expectations in red states versus blue states. The Federal Reserve Bank of New York's Survey of Consumer Expectations (SCE) does not ask respondents about their political affiliation, but it does ask about their state of residence. Using this data, we calculate median inflation expectations *by state* for the years 2017-2019 and the years 2020-2022. Figure 2 plots the medians for each state against the state's Republican and Independent voter share from the 2012 election. For the 2017-2019 period, inflation

expectations at either horizon do not vary with state political composition. In the 2020-2022 period, however, both short-run and longer-run state inflation expectations are increasing in the non-Democrat voter share. We also note that in the pandemic and post-pandemic period, short-run expectations rose in most states relative to the earlier period but that this increase is more pronounced in more Republican and Independent areas. Median longer-run expectations increase in more Republican areas in the later period, while staying close to pre-pandemic levels in more heavily Democrat areas. This reassures us that the partisan gap we observe in the Michigan Survey data is not a particular quirk of that dataset or of how respondents choose to self-report their party affiliation.

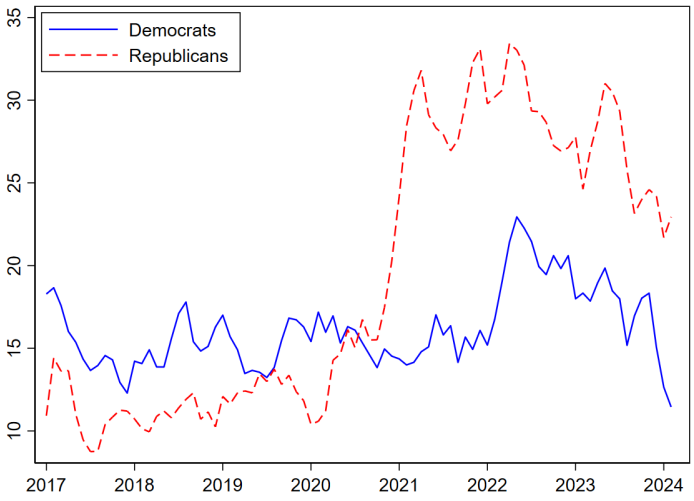
Figure 2: Inflation Expectations and Republican Voter Share by State



Notes: Data from the Survey of Consumer Expectations. Panel A shows the median one-year inflation expectation - calculated using data from each 2017 through 2019 and 2020 through 2022 - by state plotted against the share of the state voting for Mitt Romney or a third party candidate in the 2012 election. Panel B shows the same for the three-year inflation expectation.

As Republicans' expectations increased, they also drifted away from the Fed's inflation

Figure 3: Political Affiliation and Long-Run Inflation Uncertainty



Notes: Data from Michigan Survey of Consumers. Uncertainty index is computed using methodology from Binder (2017c). Three-month moving average is shown for visual clarity.

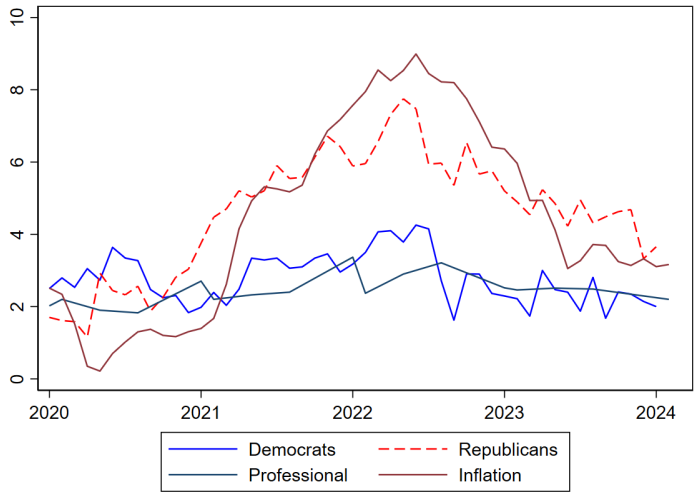
target, which is one indication of de-anchoring (Ball and Mazumder, 2011; Binder, Janson, and Verbrugge, 2022). Appendix Table A1 shows that since 2020, Democrats' expectations are most likely, and Republicans' least likely, to be within a given window of the inflation target. Uncertainty about long-run inflation is also an indication of de-anchoring, and Figure 3 shows that the long-run inflation uncertainty of Republicans rose substantially more than that of Democrats in 2020 and 2021. Another sign of de-anchoring is if expectations become more responsive to inflation itself and to shocks— that is, if they become less "shock anchored" (Ball and Mazumder, 2011). We next document that Republicans' expectations became less shock anchored in the sense that they covaried more with inflation and energy prices, and were more responsive to CPI releases.

2.2 Comovement of Expectations with Inflation and Energy

In recent years, the partisan gap in inflation expectations is increasing in inflation. As is evident from Figure 4, the expectations of Republicans tracked inflation more closely than did the expectations of Democrats or professional forecasters since 2020.

The expectations regressions in Table 2 are similar to those in Table 1, but include year-over-year CPI inflation and inflation interacted with PresidentParty and with OppositionParty as independent variables. In the first two columns, we see that short-run expectations have covaried with inflation both pre- and post-2020. In both periods, but especially recently,

Figure 4: Partisan Divide in Inflation Expectations



Notes: Data from Michigan Survey of Consumers. Figure shows median inflation expectations of Democrats and Republicans at the one-year horizons, median one-year CPI forecast from the Survey of Professional Forecasters, and year-over-year CPI inflation. Expectations of Independents are omitted for visual clarity.

the short-run expectations of members of the President's party do not covary as strongly with inflation as do the expectations of the opposite party. Since 2020, Independents' short-run expectations increase 0.5 percentage points for each percentage point rise in inflation, while Republicans' increase by 0.7 and Democrats' by 0.2.

Longer-run inflation expectations did not covary with inflation regardless of partisanship before 2020 (column 3). But since 2020, the coefficient on inflation is positive, and the coefficient on the interaction of PresidentParty and inflation is negative and of nearly the same magnitude (column 4). These estimates imply that for Republicans and Independents, long-run expectations increase by around 0.1 percentage points for each percentage point increase in inflation, while for Democrats, long-run expectations do not rise with inflation.

The inflation expectations of Republicans and Independents have also exhibited greater comovement with various measures of energy prices and supply-driven inflation than have Democrats' expectations in the COVID era. This evidence is summarized in Figure 5. Notably, the longer-run inflation expectations of Democrats have correlations near zero with all of these measures, while Republicans and Independents have positive correlations.

We also update and extend the analysis from Binder (2018) to study differences in how Republicans versus Democrats weight gas prices in forming their inflation perceptions and expectations. Binder (2018) uses the inflation expectations and gas price expectations data from the Michigan Survey at both horizons, for respondents who took the survey twice, to

Table 2: Political Party and Comovement of Expectations with Inflation

	(1) 1-yr, Pre-2020	(2) 1-yr, Since 2020	(3) 5-yr, Pre-2020	(4) 5-yr, Since 2020
Inflation	0.41***	0.46***	0.01	0.09***
	(0.04)	(0.02)	(0.03)	(0.01)
Inflation_PresidentParty	-0.08	-0.25***	0.03	-0.07***
	(0.06)	(0.03)	(0.04)	(0.02)
Inflation_OppositionParty	0.13**	0.15***	-0.00	0.02
	(0.06)	(0.03)	(0.04)	(0.02)
PresidentParty	-0.57***	-0.60***	-0.52***	-0.42***
	(0.12)	(0.13)	(0.08)	(0.09)
OppositionParty	0.09	0.33**	0.01	-0.03
	(0.13)	(0.14)	(0.09)	(0.10)
Male	-0.73***	-0.66***	-0.43***	-0.34***
	(0.04)	(0.07)	(0.03)	(0.05)
College	-0.62***	-0.77***	-0.29***	-0.49***
	(0.04)	(0.07)	(0.03)	(0.05)
Homeowner	-0.21***	-0.15**	-0.11***	-0.23***
	(0.05)	(0.07)	(0.04)	(0.06)
Constant	3.62***	3.86***	3.55***	3.75***
	(0.10)	(0.12)	(0.07)	(0.09)
N	34466	26466	34231	26412
R^2	0.04	0.10	0.01	0.02

Notes: Data from Michigan Survey of Consumers. Dependent variable is short-run inflation expectations in columns 1 and 2, and long-run inflation expectations in columns 3 and 4. *** p< 0.01, ** p< 0.05, * p< 0.10.

Figure 5: Partisan Divide in Inflation Expectations

	Short-Run Inflation Expectations			Long-Run Inflation Expectations		
	Democrats	Independents	Republicans	Democrats	Independents	Republicans
Inflation	0.49	0.85	0.80	0.07	0.38	0.49
Gas Price	0.39	0.79	0.77	0.19	0.51	0.52
Oil Price	0.32	0.64	0.62	-0.06	0.26	0.31
Gas Price Growth	0.51	0.60	0.54	-0.04	0.20	0.27
Demand Driven Inflation	0.31	0.72	0.72	0.07	0.34	0.44
Supply Driven Inflation	0.55	0.81	0.73	0.11	0.40	0.47

Notes: Correlation coefficients between median short-run or long-run inflation expectations of Democrats, Independents, and Republicans with CPI inflation, gas prices, oil prices, the percent change in gas prices over the past year, and year-over-year supply-driven and demand-driven headline inflation from Shapiro (2022). Data from January 2020 through January 2024.

infer consumers' beliefs about the dynamics of core and gas price inflation, and the weight ω that consumers put on gas prices when forming their expectations of inflation. She estimates $\omega = 4\%$, which is similar to the expenditure share on gasoline, indicating no overweighting of gas prices in inflation expectations. Since 2020, the estimate of ω is 5% for Democrats and 8% for Republicans, meaning that Republicans weight gas prices nearly twice as heavily as Democrats in their expectations formation.

3 Response of Expectations to Events

We have shown that Republicans' inflation expectations rose substantially more than Democrats' during the COVID-era rise in inflation. In this section, we use higher-frequency analysis to study the differential responses of Democrats and Republicans to CPI releases and FOMC announcements. For this analysis, we make use of the fact that the Michigan Survey has recorded the exact date that respondents took the survey.[4] The high frequency data facilitates clean identification of the drivers of expectations via an event study approach, in which respondents who took the survey within a few days before an event of interest serve as a control group for respondents who took the survey within a few days after the event. The difference in expectations between the groups provides an estimate of the effect of the event on expectations. The approach is similar to those of (Binder, Campbell, and Ryngaert, 2023)and (York, 2023) who use the SCE and Michigan survey, respectively, to study the response of expectations to data releases.

Building on the work of Binder, Campbell, and Ryngaert (2023), we hypothesize that Republicans' expectations may have been particularly sensitive to events. That is, we are interested in the *differential* effect of events on Republicans' versus Democrats' expectations. Thus, restricting our sample to Republicans and Democrats, we conduct the following event study:

$$E_{i,t}\left[\pi^{1YR}\right] = \alpha + \beta_1 Post_t \times Republican_i + \beta_2 Post_t + \beta_3 Republican_i + \epsilon_{i,t}, \tag{1}$$

where our dependent variable, $E_{i,t}\left[\pi^{1YR}\right]$, is respondent i's one-year ahead inflation expectation reported on day t. The indicator $Post_t$ is equal to zero before the event date and equal to one on the event date and after. The indicator $Republican_i$ is equal to one if respondent i states they are politically affiliated with the Republican party or if they "lean" Republican.

[4]For 2019 to April 2023, we obtained the daily dates directly from the MSC via email. Daily interview dates prior to 2019 are available from the Inter-University Consortium for Political and Social Research.

Thus, β_2 is the estimated treatment effect of the event on the expectations of both Republicans and Democrats, and β_3 captures any consistent level difference between Republican and Democratic expectations. Importantly, β_1 is our coefficient of interest. It indicates how Republicans differentially changed their inflation expectations relative to Democrats following an event (e.g., a CPI release or an FOMC announcement).

3.1 High-Frequency Response to Announcements

We begin our high-frequency analyses with CPI announcements, which - given their content - we assert are the most likely to affect inflation expectations. We use ten day windows (five days before the event and five days after the event). A ten day window balances the tradeoff between the benefit of clearly isolating the effect of an event with a narrow window and the cost of lost observations and power. Figure 6 plots the partisan response coefficient (β_1) from equation 1 for each CPI release between September 2020 through January 2022. Panel A uses one-year ahead inflation expectations as the dependent variable, whereas Panel B uses five-to-ten-year inflation expectations. On average, each event study is estimated on 160 responses. Both panels also include the times series for the reported, real-time, change in CPI inflation (plotted on the right-hand-side axis).

From September 2020 though March 2021, every reported CPI inflation rate was below 2%. During this low and stable inflation period, there were no significant differences in Republican inflation expectations relative to Democrats following CPI releases.[5] However in April 2021, the March 2021 CPI was released and CPI inflation was reported as increasing from 1.7% to 2.6%.[6] Republican one-year ahead inflation expectations significantly and differentially rose relative to Democrats ($\hat{\beta}_1 = 3.7$) following this near one percentage point rise in inflation. That is, in the days following the CPI release Republicans differentially increased their short-run inflation expectations by 3.7 percentage points more than Democrats.

The following month, inflation rose even faster. Specifically in May 2021, it was reported that CPI inflation rose from 2.6% to 4.1%. We find that following this announcement Republicans significantly increase their one-year ahead inflation expectations relative to Democrats with an estimated $\hat{\beta}_1 = 5.6$. The rapid ascent of inflation continued in June 2021 when reported CPI inflation rose from 4.1% to 4.9%. Again, Republicans significantly increased their

[5] Appendix Figure A1 expands the analysis to a longer window. Prior to COVID (2019 through February 2020), the differential effects of CPI announcements on Republican expectations relative to those of Democrats were near zero, insignificant, and had tight standard errors. In the early COVID period (March 2020-March 2021) when vaccines were in development or not widely available and inflation was under 2%, we see no significant difference in Republican responses to CPI releases relative to Democrats; however, the estimated event study coefficients are mostly small and positive.

[6] These are the real-time estimates in April 2021 of year-over-year CPI inflation in February and March 2021, respectively.

one-year ahead inflation expectations relative to Democrats, by an estimated differential of 3.6 percentage points. Furthermore, for the first time in the sample, there is a significant differential response of Republicans raising their five-to-ten year inflation expectations relative to Democrats ($\hat{\beta}_1 = 3.3$).

Inflation continued to rise and in July 2021 the inflation rate of 5.3% was released. This was an increase of only 0.4 percentage points, which was smaller than the previous three months. While the estimated event study coefficient suggests that Republicans differentially increased their one-year ahead inflation expectations by 2.2 percentage points, this effect is insignificant. Yet, long-run inflation expectations did exhibit a significant differential response.

In the months that followed, inflation continued to rise; however, at a slower pace than the summer of 2021 and Republicans did not differentially change their inflation expectations relative to Democrats. Appendix Figure A1 plots a longer time series and shows that in 2022 through April 2023 (when inflation peaked and began falling), standard errors on the estimated event study coefficient widen. This is consistent with the rise in uncertainty about inflation.

Summarizing the results, the estimated differential response of Republican inflation expectations (relative to Democrats) to CPI releases is positively correlated with the reported change in inflation during the COVID era. Our findings are not simply the result of consistently rising Republican inflation expectations. Appendix Figure A3 plots seven-day, rolling-window regressions of one-year ahead inflation expectations on a dummy for Republican. Clearly, Republican inflation expectations spike following the CPI releases in April, May, and June 2021 (denoted by red vertical lines). Furthermore, placebo tests on non-event days do not result in significant differences in Republican and Democratic expectations. In Figure A4, we replicate the analyses presented in Figure 6 using a hypothetical event ten days after the actual CPI announcement. There are no significant differential changes in inflation expectations around these placebo dates.

Next, we may want to consider if the differential responses of inflation expectations in the event study are driven by the rise of Republican inflation expectations or the decline of Democratic inflation expectations. Appendix Figure A2) conducts a simple event study of one-year inflation expectations on a dummy variable indicating on or after a CPI release. Panel A uses only Republicans and Panel B uses only Democrats. Republicans indeed increase their short-run inflation expectations in response to CPI releases in April, May, and June 2021 and significantly so in the latter two months. Interestingly, despite notable increases in inflation in April, May, and June 2021, Democrats decreased their inflation expectations around these CPI releases. In terms of the magnitudes of the coefficients, the

Republican increases in expectations are larger than the decreases in Democratic expectations.

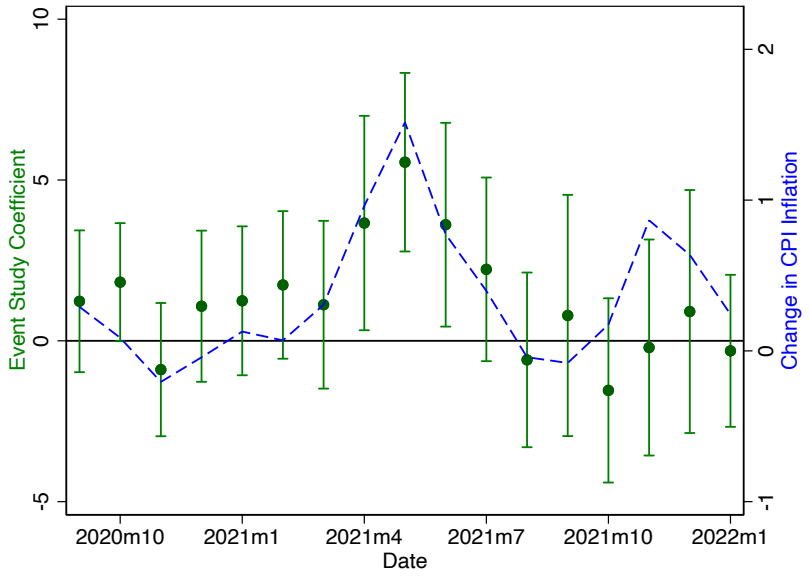
There are two mechanisms that may be driving these findings. First, Republicans were more uncertain about inflation 3 than Democrats, so incoming news about rising inflation may have been more likely change the expectations of Republicans than Democrats. This would be consistent with a model of Bayesian updating where Republicans have more uncertain priors than Democrats and thus Republicans make larger changes to their beliefs conditional on the same signal.

Second, some of the differential response of partisan inflation expectations is likely driven by the news narrative around inflation in these months. For instance, the term "transitory" was first used by the FOMC on April 28, 2021 with the statement "Inflation has risen, largely reflecting transitory factors."' This was the first use of the word "transitory," and a major break from the previous statement, which noted that "Inflation continues to run below 2 percent." Shortly after the Fed's description of inflation as "transitory," the Biden administration took the same position. Within this context, news organizations often discussed the framing that inflation was fleeting; however, the tone of the coverage varied across news organizations. Reporting on CNN was more sympathetic to the Fed and administration view. For example, a CNN article on May 14th, covering the recent CPI release, noted that "The rise in inflation might also be a little exacerbated by the fact that prices were unnaturally low a year ago, when the pandemic erupted... For now at least, there's no panic at the White House—and officials are even arguing that the rise in prices is a sign that Americans are willing to come out of quarantine after getting vaccinated. White House press secretary Jen Psaki this week argued that some transitory increases in inflation were to be expected as America resumed activity: 'That's something that we have prepared for and that most economists say will be temporary."'[7] On Fox News, in contrast, commentator Peter Schiff noted, "Well, now they're saying, don't worry about inflation. It is transitory. Inflation is as transitory now as the subprime market was contained..."[8] If partisans consume different news sources, differential framing of the rise in inflation could have driven the differential inflation expectation responses to CPI releases.

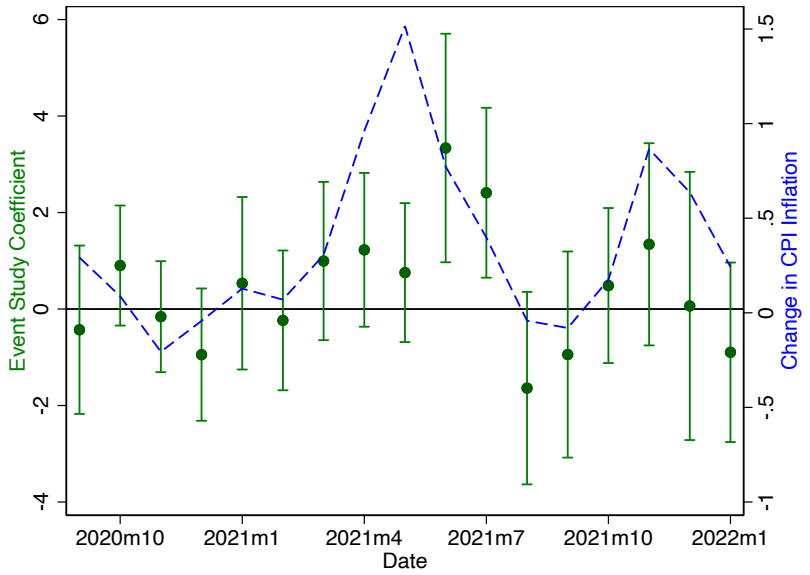
[7]Stephen Collinson, May 14, 2021. "America's new mask rule means new questions." CNN Wire.

[8]Tucker Carlson, Trace Gallagher, Mollie Hemingway, May 12, 2021. Tucker Carlson Tonight, Fox News Network.

Figure 6: High-Frequency Analysis of Partisan Expectations to CPI Releases



(a) Short-Run Inflation Expectations



(b) Long-Run Inflation Expectations

Notes: Data from Michigan Survey of Consumers. Estimates of β_1 and 90% confidence intervals are plotted from equation 1 on the left-hand side axis. Panel A uses one-year inflation expectations and Panel B uses five-to-ten-year inflation expectations. On the right-hand side axis, the change in percent inflation in real-time data is plotted. Note that it any given month, the previous month's CPI is reported. Accordingly the change in inflation is lagged by one month to be consistent with the news being reported in a given month. Individuals who state they are Republican or lean Republican are classified as Republicans, and similarly for Democrats. If respondents, do not know their affiliation or do not lean towards either party, they are excluded.

4 Inflation Expectations and Realized Inflation

The previous sections have provided evidence of a partial and heterogeneous de-anchoring of consumer expectations in the COVID era. Expectations remained well-anchored for Democrats, but less so for Republicans and Independents. In this section, we examine how this partisan de-anchoring mattered for inflation dynamics. If non-Democrats were simply "voting by survey"— that is, reporting high inflation expectations on the survey to express their dislike of the Biden Administration—then their higher reported expectations might be a form of measurement error that does not matter for inflation. This does not seem to be the case: we find non-trivial inflationary effects from the partial de-anchoring.

Consider a standard expectations-augmented Phillips curve of the form:

$$\pi_t = \lambda u_t + \gamma E_t[\pi] + \epsilon_t, \tag{2}$$

where u_t is unemployment, π_t is inflation, and $E_t[\pi]$ is expected inflation. Hazell et al. (2022) show that this equation can be estimated at a subnational level:

$$\pi_{r,t} = \lambda u_{r,t} + \gamma E_{r,t}[\pi] + w_r + e_t + \epsilon_{r,t} \tag{3}$$

where w_r is regional r's fixed effect and e_t is a time effect. Hazell et al. (2022) and others that have used regional data to estimate the above equation have focused on the slope (the coefficient λ on unemployment). They iterate forward so that the regional Phillips Curve has long-run expected inflation, and assume that long-run inflation expectations are common across regions, since they "depend solely on the monetary policy regime in place" (Cerrato and Gitti, 2024, p. 8). Thus, the expectations term is wiped out by the time fixed effects. We argue that long-run expectations depend not only on the monetary policy regime in place *but also on the partisan interpretations of the monetary regime.* As we saw in Figure 2, in the pandemic and post-pandemic period, inflation expectations rose more in more densely Republican states. To the extent that there are regional differences in partisan composition, there will be regional differences in long-run inflation expectations.

In principle, one might estimate Equation 3 using measures of average inflation expectations in each locality of interest ($E_{r,t}[\pi]$) directly from either the Michigan Survey or the Survey of Consumer Expectations. To estimate this equation, however, we need an estimate of inflation expectations as well as realized unemployment and inflation at the same geographic level. Realizations are available at both the Census region and MSA level. While direct measures of expectations at the Census region level are available, these are quite noisy and leave us with only four groups in the panel. The Michigan Survey does not provide

respondents' MSA, so direct measures of expectations by MSA are not available.

We exploit geographic variation in political composition and time-varying changes in partisan disagreement to model expectations as:

$$\tilde{\pi}_{r,t} = \sum_{k} \omega_{r,k} E_{k,t}[\pi] \tag{4}$$

where $\omega_{r,k}$ is the percentage of region r belonging to political group k. $E_{k,t}[\pi]$ is group k's time t expectation of national inflation. We define three political groups - Republicans, Democrats, and Independents. The shares, ω are determined using voter shares from the 2016 election: $\omega_{r,Rep.}$ is the share of the population of location r that voted for Donald Trump, $\omega_{r,Dem.}$ is the share that voted for Hillary Clinton and $\omega_{r,Ind.}$ is the share of third party voters. We measure the average inflation expectations of each group with the Michigan Survey. In the post-pandemic era, $\tilde{\pi}_{r,t}$ is higher either when Republican or Independent expectations rise relative to Democrat expectations (i.e. partisan de-anchoring) or when a region is more exposed to this de-anchoring due to a higher concentration of Republicans and Independents.

We estimate the effect of de-anchoring on realized inflation with the following regression:

$$\pi_{r,t} = \beta_0 + \beta_1 \tilde{\pi}_{r,t} + \beta_2 u_{r,t} + w_r + e_t + \epsilon_{r,t} \tag{5}$$

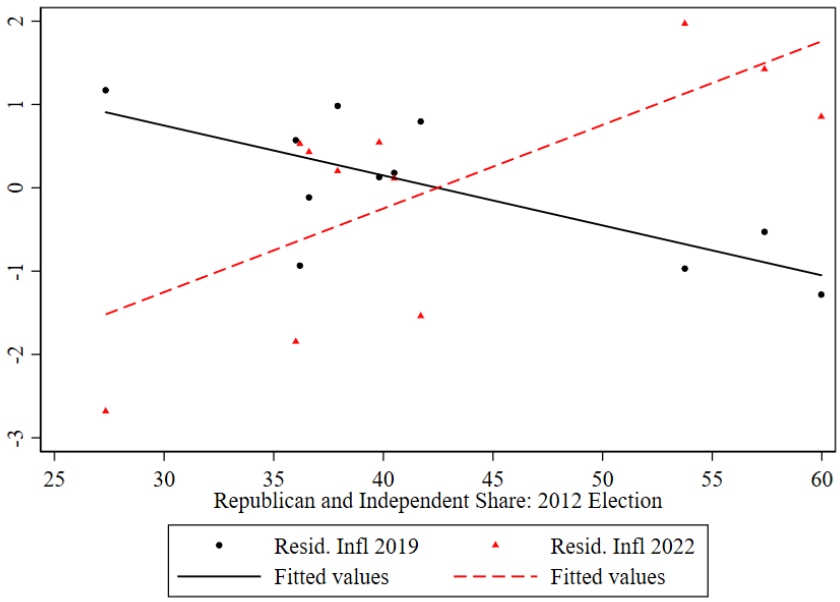
Note that if there is no partisan disagreement in inflation expectations, that is $E_{Rep.,t}[\pi] = E_{Dem.,t}[\pi] = E_{Ind.,t}[\pi]$, or no geographic variation in political composition, that is $\omega_{r,k} = \omega_k$ for all k and r, then $\tilde{\pi}_{r,t}$ varies only with time and is therefore absorbed by the time fixed effect. A causal interpretation of β_1 requires that the components of $\tilde{\pi}_{r,t}$ are exogenous. That is, $E[\epsilon_{r,t}|\omega_{r,k}]\,\forall k$ and $E[\epsilon_{r,t}|E_{k,t}[\pi]]\,\forall k$ (Goldsmith-Pinkham, Sorkin, and Swift, 2020). As the expectations for each party are calculated at the national level, these expectations should be exogenous to *local* shocks that might impact both expectations and inflation. The shares may pose a threat to endogeneity if partisan governance impacts inflation. We discuss this assumption more in Section 4.1.

4.1 MSA-level Phillips Curve

Realized MSA level inflation was higher in more densely Republican and Independent MSAs. To capture the geographic differences in political affiliations, we use 2012 voter shares from the television media market corresponding to each MSA as collected by Daily Kos. The Republican and third party voter shares in our dataset range from 27% (San Francisco) to 60% (Dallas). We start our sample in 2012 to coincide with the introduction of inflation targeting. Figure 7 plots realized inflation - less MSA and date fixed effects - in June of

2019 and June of 2022. Prior to the COVID-19 pandemic, inflation was lower in less heavily Democrat areas. In the post-pandemic period, this relationship reversed.

Figure 7: Inflation Realizations and Partisan Composition



Notes: The figure plots the residual of a regression of realized inflation on time and MSA fixed effects against the MAS of the state voting for Mitt Romney or a third party candidate in the 2012 election. These appear in black for June 2019 and orange for 2022.

We use variation in realized inflation and unemployment across MSAs as in Cerrato and Gitti (2024) to estimate Equation 5. The BLS collects monthly unemployment rates at the MSA level. We construct an inflation rate using the local CPI calculated by the BLS. This index is calculated monthly for New York, Chicago, and Los Angeles, and bi-monthly for several other MSAs. Following Cerrato and Gitti (2024), we linearly interpolate the CPI to fill the missing inflation observations, giving us monthly data to match the frequency of the Michigan Survey. We construct a proxy for the inflation expectation of the MSA using the average party and the voter shares used in Figure 7.

We find strong positive and significant effects of inflation expectations on inflation itself. Table 3 presents the results of estimating Equation 5 with 1-year and 5-year inflation expectations in columns (1) and (2). These imply that a one percentage-point increase in 1-year or 5-year inflation expectations lead to a 1.3 or 2.3 percentage point increase in inflation, respectively. The difference in coefficients reflects that the partisan difference in expectations is larger for short-run inflation expectations than for long-run expectations.

Table 3: MSA-Level Phillips Curve

	(1) Inflation	(2) Inflation	(3) Inflation	(4) Inflation
Unemp.	-0.179***	-0.169***	-0.251***	-0.243***
	(0.032)	(0.034)	(0.034)	(0.035)
$\tilde{\pi}_1yr$	1.295***		1.033***	
	(0.111)		(0.153)	
$\tilde{\pi}_5yr$		2.262***		1.906***
		(0.316)		(0.406)
N	1123	1123	1123	1123
R^2	0.90	0.90	0.92	0.91

Notes: Dependent variable is MSA level all-price inflation. Columns 3 and 4 include an indicator that is equal to 1 if the governor is a Republican interacted with *** p< 0.01, ** p< 0.05, * p< 0.10.

A causal interpretation of our estimates requires that changes in inflation be exogenous to the share $\omega_{r,k}$. The pandemic period leaves plenty of room to doubt this assumption, as pandemic response policies varied with the regional political composition and possibly contributed to inflationary pressures. To address this concern, we include the interaction between time fixed effects and an indicator equal to 1 if the state of the main city in the MSA had a Republican governor in that period. This allows time-varying shocks to affect inflation differently in Republican-governed areas, possibly through policy responses to COVID chosen by the state executive on partisan lines. Columns 3 and 4 of Table 3 show that the coefficients on inflation expectations are slightly reduced in magnitude to 1.0 and 1.9 for one-year and five-year expectations., respectively.

Next we present several reduced form counterfactual exercises to emphasize the implied effect of elevated inflation expectations on realized inflation.

4.2 Counterfactual Analysis

First, we consider the predicted path of inflation under two extremes of expectations anchoring - all households unanchored or all households anchored. Specifically, we use the regression coefficients from column 3 of Table 3 to predict for each MSA what realized inflation would have been if the average year-ahead expectation in all regions was equal to the average expectations of Republicans (all unanchored) or equal to the average expectations of Democrats (all anchored). The counterfactual expectations in *all* MSAs will be higher than $\tilde{\pi}_{r,t}$ when set equal to the average Republican expectation and lower when set equal to the average Democrat expectation, as political affiliation varies within all MSAs.

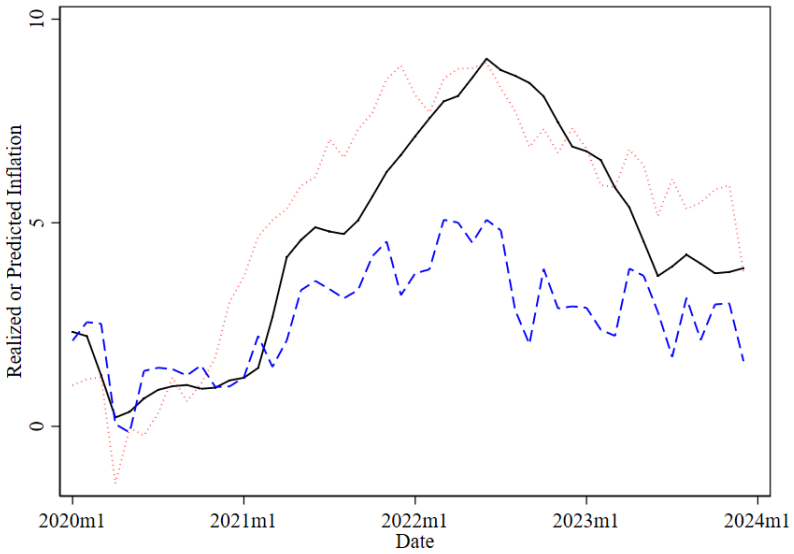
The resulting fitted values show that inflation would have been higher if all expectations

de-anchored and lower had all expectations remained anchored. The solid black line in Figure 8a shows the average realized inflation rate across MSAs. The average predicted values when all expectations are equal to those of Democrats and those of Republicans are given by the blue dashed and red dotted line. The red line suggests that inflation would have been higher than realized starting in 2020 and significantly higher well into 2022. The fully de-anchored case returns predicted values of inflation close to the average realization in late 2022 and higher than realized inflation throughout 2023. The blue line, the case where all expectations remain firmly anchored implies lower than realized inflation for the entire pandemic and post-pandemic period.

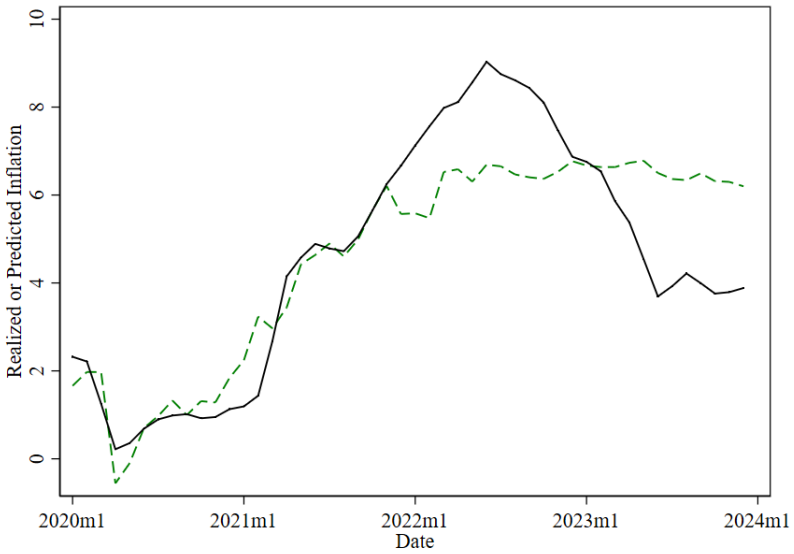
Jointly, these results suggest that the partial de-anchoring of expectations did play a role in the increase in inflation and - importantly - the fact that inflation expectations remain de-anchored for part of the population continues to slow the return of inflation to its target level. Realized inflation throughout 2023 remained above its early 2020 level. The blue line - representing the case in which all expectations are anchored - implied predicted inflation close to pre-pandemic levels.

We next consider the counterfactual path of inflation had expectations remained at their peak level. For each MSA, we fix the value of $\tilde{\pi}$ at its June 2022 level. Figure 8b shows the result. The predicted values, plotted as the green dashed line, stabilize at the peak level of inflation and are substantially higher than realized inflation, particularly in 2023. This suggests that the decline in expectations that began mid-2022 did play an important role in bringing down inflation.

Figure 8: Counterfactual Inflation



(a) Different Degrees of Anchoring



(b) Expectations Remain Elevated

Notes: The top panel plots realized inflation as well as predicted inflation under two counterfactual values of $E_{r,t}[\pi]$, $E_{Rep.,t}[\pi]$ and $E_{Dem.,t}[\pi]$. The solid line gives the average realized inflation rate across MSAs. The predicted inflation rates when all expectations are equal to those of Republicans or equal to those of Democrats are given by the dotted red and dashed blue lines, respectively. The bottom panel plots realized inflation as well as predicted inflation if inflation expectations had remained at their June 2022 levels. The average realized MSA-level inflation rate is plotted as a solid black line and the predicted value of inflation is plotted as a green dashed line.

5 Conclusion

During the COVID-19 rise in inflation, Democratic expectations stayed remarkably level anchored while Republican inflation expectations rose and fell with realized inflation. This environment—in which two groups of consumers face the same macroeconomic conditions and monetary policy, but different *beliefs* about the monetary regime—provides a unique setting in which to study the effects of inflation expectations on inflation. We exploit the geographic variation in political affiliation to show that the partial de-anchoring of expectations increased inflation. In counterfactual exercises, we show that had all expectations become as unanchored as those of Republicans, average inflation would have been two to four percentage points higher in 2021 to 2024.

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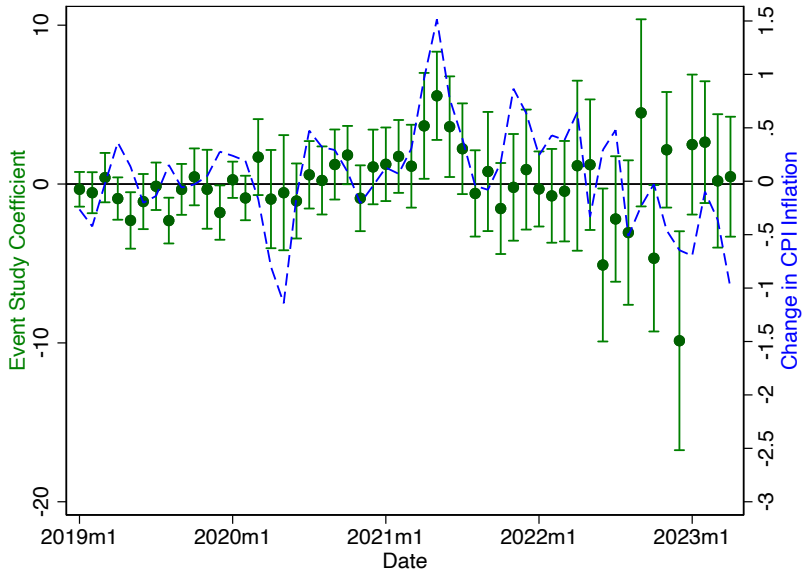
Appendix A Additional Tables and Figures

Table A1: Political Party and Near-Target Expectations

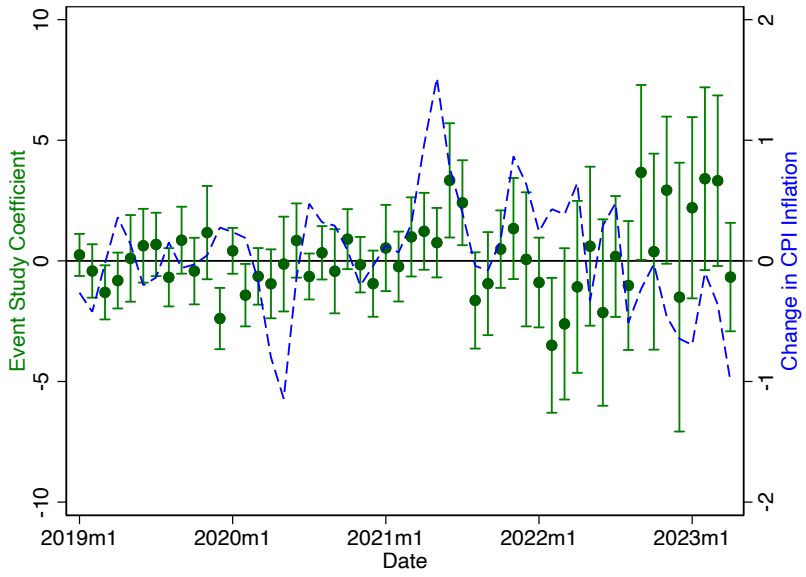
	(1) Short in 1 to 3	(2) Short in 1 to 4	(3) Long in 1 to 3	(4) Long in 1 to 4
Republican	-0.03***	-0.03***	-0.03***	-0.03***
	(0.01)	(0.01)	(0.01)	(0.01)
Democrat	0.05***	0.04***	0.09***	0.08***
	(0.01)	(0.01)	(0.01)	(0.01)
Male	0.02***	0.03***	0.06***	0.08***
	(0.01)	(0.01)	(0.01)	(0.01)
College	0.03***	0.04***	0.10***	0.12***
	(0.01)	(0.01)	(0.01)	(0.01)
Homeowner	-0.00	-0.00	0.04***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)
Constant	0.27***	0.31***	0.39***	0.43***
	(0.01)	(0.01)	(0.01)	(0.01)
N	26466	26466	26412	26412
R^2	0.01	0.01	0.02	0.03

Notes: Data from Michigan Survey of Consumers. Dependent variable is a dummy variable indicating that short-run or long-run inflation is within the range indicated (1% to 3% or 1% to 4%). *** p< 0.01, ** p< 0.05, * p< 0.10.

Figure A1: High-Frequency Analysis of Partisan Expectations (Long Sample)



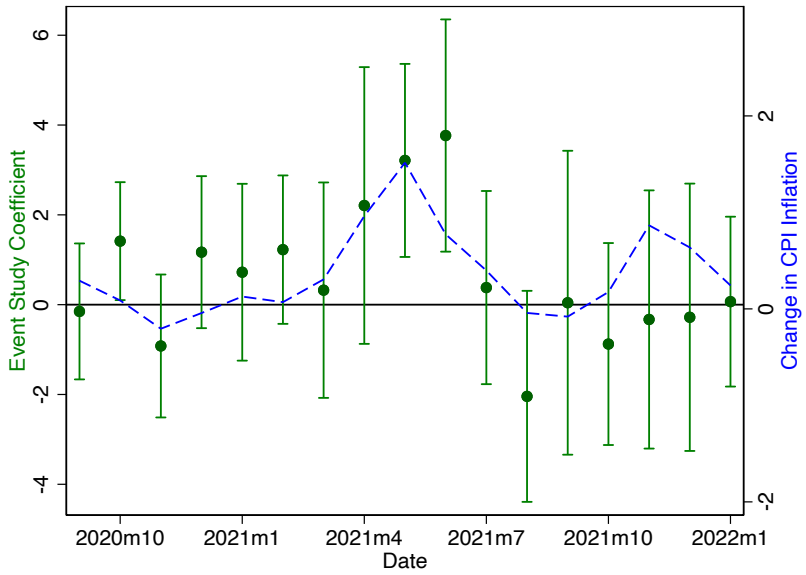
(a) Short-Run Inflation Expectations



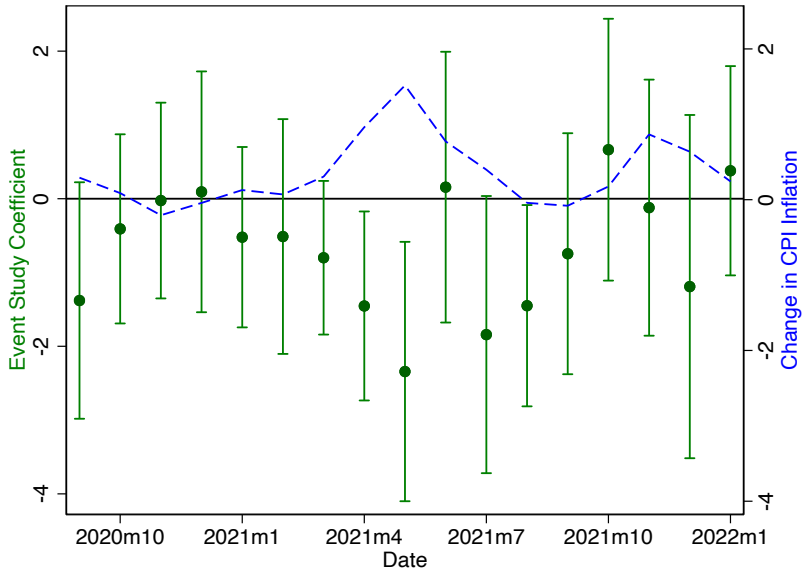
(b) Long-Run Inflation Expectations

Notes: Replicates the analyses from Figure 6 over a longer sample of January 2019 through April 2023.

Figure A2: High-Frequency Analysis of Partisan Expectations (Republicans and Democrats Separately)



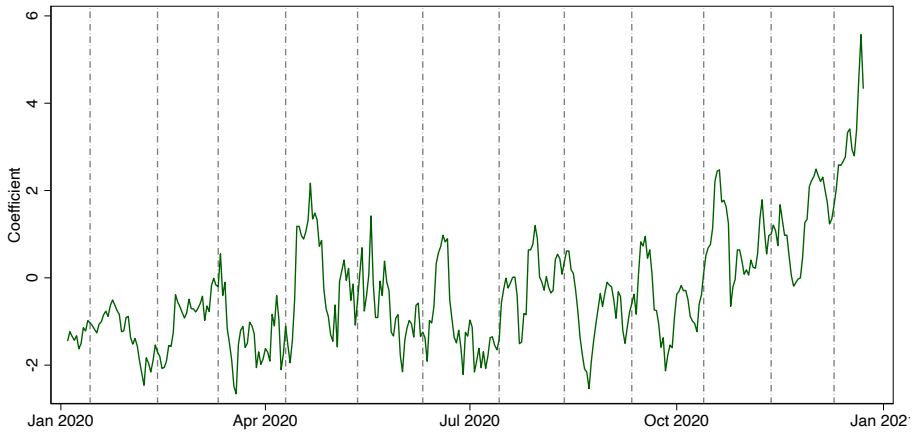
(a) Republicans



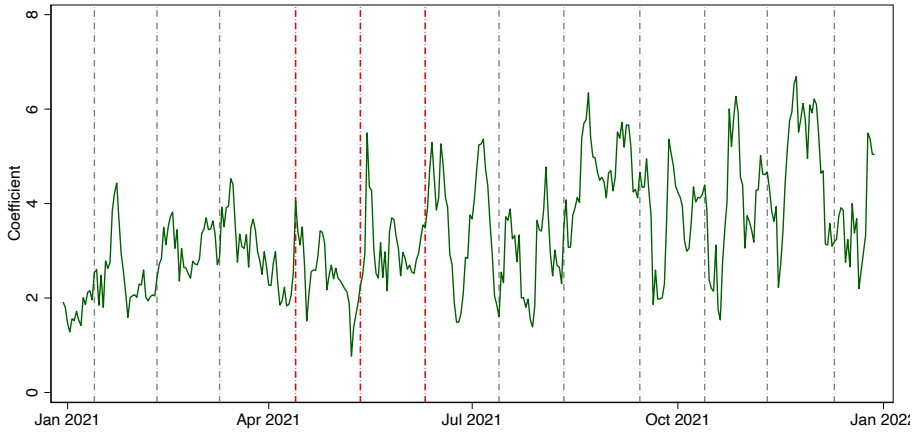
(b) Democrats

Notes: For Republicans and Democrats separately, an event study is conducted around CPI releases. Specifically, $E_{i,t}[\pi^{1YR}] = \alpha + \beta Post_t + \epsilon_{i,t}$ is run on data five days before and five days after each CPI release and $Post_t$ is an indicator for after the announcement. See notes of Figure 6 for additional information.

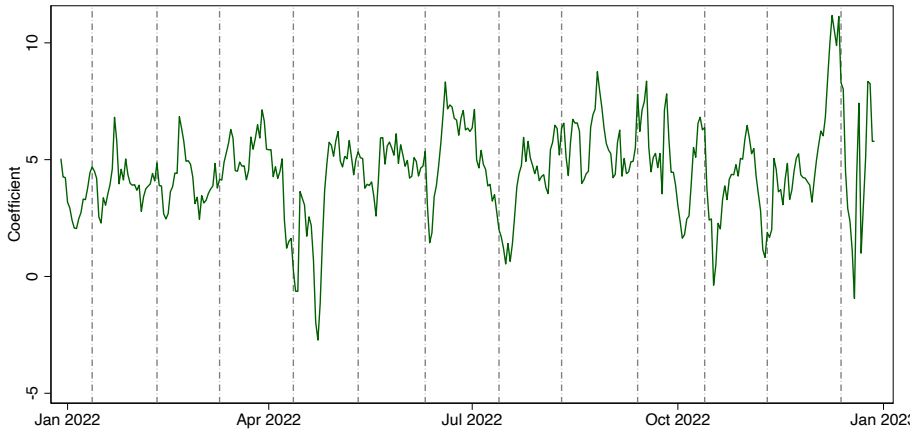
Figure A3: Partisan Difference in Inflation Expectations, Rolling Window



(a) 2020



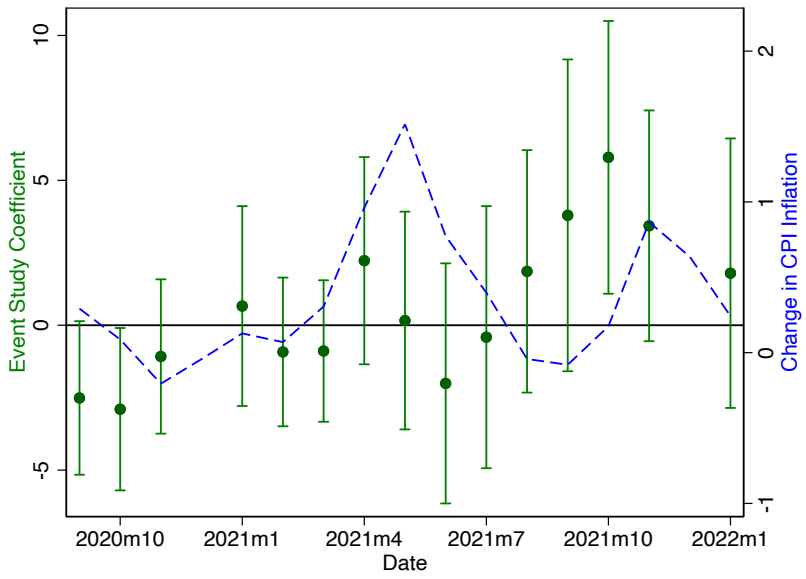
(b) 2021



(c) 2022

Notes: Seven-day rolling regressions of one-year inflation expectations on a dummy for Republican ($E_i[\pi^{1YR}] = \alpha + \beta Republican_i + \epsilon_i$). The estimated coefficient is plotted in the middle of the sample. Vertical lines are CPI releases. Red vertical lines indicate the significant responses from event study presented in Figure 6.

Figure A4: High-Frequency Analysis of Partisan Expectations (Placebo)



Notes: Replicates the analyses from Figure 6 Panel A using a placebo CPI release date ten days after the actual announcement. Decembers are omitted as there are few respondents surveyed around the holidays at the end of the year.